

SEDIMENT STORAGE CONVERSION

Tons of Soil Loss per Acre per Year	Accumulated Sediment For a 10 Year Period - Inches/Acre										
	0.0	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	
0.0	0.0000	0.0061	0.0122	0.0184	0.0245	0.0306	0.0367	0.0429	0.0490	0.0551	
1.0	0.0612	0.0673	0.0735	0.0796	0.0857	0.0918	0.0980	0.1041	0.1102	0.1163	
2.0	0.1224	0.1286	0.1347	0.1408	0.1469	0.1530	0.1592	0.1653	0.1714	0.1775	
3.0	0.1837	0.1898	0.1959	0.2020	0.2081	0.2143	0.2204	0.2265	0.2326	0.2388	
4.0	0.2449	0.2510	0.2571	0.2632	0.2694	0.2755	0.2816	0.2877	0.2939	0.3000	
5.0	0.3061	0.3122	0.3183	0.3245	0.3306	0.3367	0.3428	0.3489	0.3551	0.3612	
6.0	0.3673	0.3734	0.3796	0.3857	0.3918	0.3979	0.4040	0.4102	0.4163	0.4224	
7.0	0.4285	0.4346	0.4408	0.4469	0.4530	0.4591	0.4653	0.4714	0.4775	0.4836	
8.0	0.4897	0.4959	0.5020	0.5081	0.5142	0.5204	0.5265	0.5326	0.5387	0.5448	
9.0	0.5510	0.5571	0.5632	0.5693	0.5755	0.5816	0.5877	0.5938	0.5999	0.6060	
10.0	0.6122	0.6183	0.6244	0.6305	0.6367	0.6428	0.6489	0.6550	0.6612	0.6673	

EXAMPLE: 4.5 ton/acre soil loss per year yields 0.2755 inches per acre of sediment over a 10-year period.

Notes

1. All values based on 90 lb/ft<sup>3</sup> soil.
2. See page 8-144 for examples.

ADDITIONAL CONVERSION FACTORS

Wt. of Soil (lbs/ft <sup>3</sup> )	80	85	90	95	100	105	110	115	120
Inches/Acre	1.125	1.06	1.0	.95	.90	.86	.82	.78	.75
Cubic Feet/Ton	25.0	23.5	22.2	21.1	20.0	19.0	18.2	17.4	16.7

Exhibit IN-8-14 Accumulated Sediment Storage

(Sheet 1 of 2)

Example 1) A terrace is being installed with a computed soil loss of 3.5 ton/acre/year. What additional storage depth in inches must be included in the design storage volume to provide for this sediment accumulation for a 10 year structure design?

From Exhibit IN-8-14 for 3.5 ton/acre/year soil loss, the accumulated 10 year sediment is 0.2143 inches/acre.

Example 2) Find the accumulated sediment for 3.2 T/A/Y of soil loss for 105 lb/ft<sup>3</sup> soil.

From Exhibit IN-8-14 for 3.2 T/A/Y soil loss the accumulated 10 year sediment is 0.1959 inches/acre.

From ADDITIONAL CONVERSION FACTORS for 105 lb/ft<sup>3</sup> soil, the inches/acre conversion factor is 0.86. The 10 year accumulated sediment depth in inches is 0.1959 inches/acre  $\times$  0.86 = 0.168 inches in depth per acre.

Example 3) Find the accumulated sediment in depth for 14.8 ton/acre/year for a 10 year period.

14.8 T/A/Y = 7.4 T/A/Y. From Exhibit IN-8-14 for 7.4 T/A/Y = 0.453 inches  $\frac{2}{2}$  of accumulated sediment. For 14.8 T/A/Y the accumulated sediment equals 0.453  $\times$  2 = 0.906 inches/acre.